



# HOW TO RECOGNIZE IF CHEMICAL AGENTS HAVE BEEN USED

## **In the Environment**

- Dead plants
  - Some chemicals will kill plant life quickly, so unusual patterns of dead grass, flowers, etc. may indicate the presence of chemical warfare agents.
- Dead insects/no insects
  - Chemical agents may kill or drive off insects; nerve agents may act sufficiently rapidly that large numbers of dead insects may be seen on the ground.
- Dead or dying animals
  - Chemicals that injure humans usually will affect animals, although sometimes in different ways and at different speeds than humans. If groups of animals seem to be dying at the same time without obvious cause, this suggests a chemical attack.

## **Casualties**

- Mass casualties with similar symptoms without obvious physical trauma.
  - Chemicals tend to affect people at roughly the same time, so release of a chemical agent will tend to produce a group of casualties at locations near the release. Mustard agents are an exception. Because of the time period between exposure and appearance of symptoms for mustard casualties, it is possible that casualties would appear at separate locations to which people had traveled after exposure, possibly over a period of several hours.
- Mass casualties appearing in certain patterns.
  - Chemicals used to poison food or drink will affect only those eating or drinking the tainted materials; the rapid action of most poisons will tend to produce casualties at or near the dining location without affecting those who don't eat (e.g., servers, cashiers, etc.).
  - Chemicals disseminated as vapors or aerosols will tend to move with the wind if outside, resulting in people becoming ill along the path the chemical travels in the environment.
  - Chemicals disseminated as vapors or aerosols inside a structure will affect those entering the structure.

## **Other**

- Odors
  - Not usually reliable, as incidents involving casualties usually involve diverse odors; however, some agents do have distinctive odors.
- Unexplained deposits of material in an area where casualties occur
  - Liquid droplets or puddles without evidence of rain or watering
  - Dust or powders

- Spraying activity in inappropriate areas
  - A crop duster over a residential area or a lawn service firing up its sprayers in a parking lot
- Abandoned equipment that might have been used to produce a spray or a powder aerosol
- Explosive devices that seem to misfire or explode weakly, scattering liquids or solids (possible chemical agents)

*Remember: In any incident involving an explosive device, there may be additional “secondary” devices set for later times to injure responders.*

**For more information, call the North Dakota Department of Health at 701.328.2378.**